The Chinese challenge to the EU25

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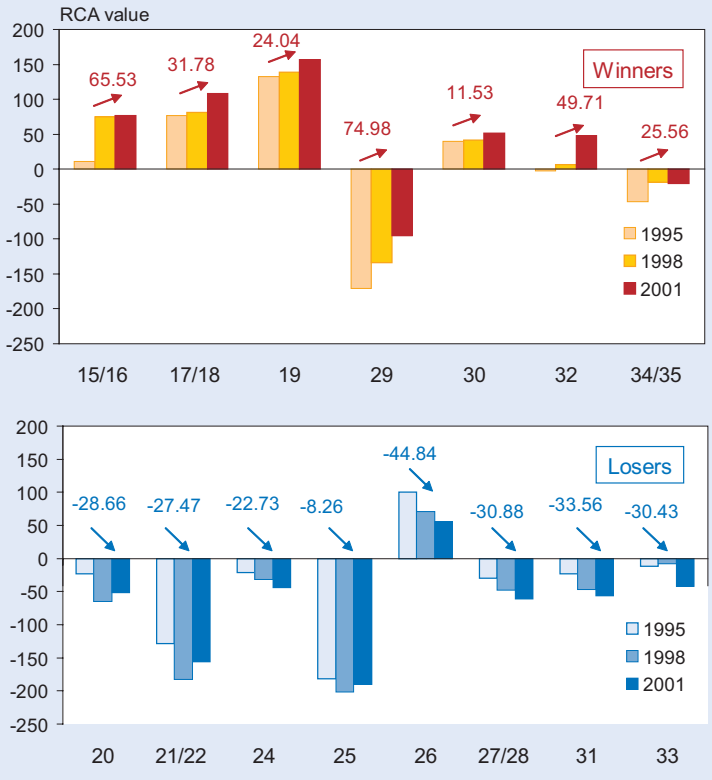
The liberalization of the global textile and clothing markets at the beginning of 2005 has – as expected – led to trade tensions. Soaring imports induced the EU to put a brake on Chinese deliveries. But the Chinese challenge is not restricted to low-tech labour-intensive products. As disclosed by a revealed comparative advantage (RCA) analysis, the Chinese position in international trade is improving even in those product categories in which it has been strongly dependent on foreign deliveries until recently, such as machinery and equipment. RCA has remained strongly negative but shows a clear improvement for China, whereas the situation is quite the opposite for the EU15 and the new Member States.[1] In trade theory, factor endowment is regarded a major explanation of trade flows. In line with this theory, product groups have been clustered according to the most important factors of production, i.e. labour skills, capital and know-how intensity. China's exports to the EU15 are compared with the exports of the new EU Member States and Candidate Countries.[2] The result unveils that China is an important supplier of high-tech products that require highly skilled labour and/or R&D. Their share in total exports to the EU15 is at least as high as that of the new Member States. This implies that the Chinese challenge is not limited to simple products. China has become a competitor of the new EU Member States, as well as a competitor of high-tech- manufacturers in the EU15.

China has become an important supplier of high-tech products

Figure 1

China's Revealed Comparative Advantage
(NACE 2-digit level)



NACE categories mentioned:

15/16 Food and beverages
17/18 Textiles, apparel
19 Leather products
20 Wood products
21/22 Pulp, paper, media products
24 Chemicals
25 Rubber and plastics
26 Non-metallic minerals
27/28 Basic metals a. metal products
29 Mechanical engeneering
30 Computers
31 Electrical engineering
32 Electronic components, IT-consumer goods
33 Optical instruments, measurement, process control equipment
34/35 Transport equipment

Source: OECD; EUROSTAT; Wifo, own calculations.

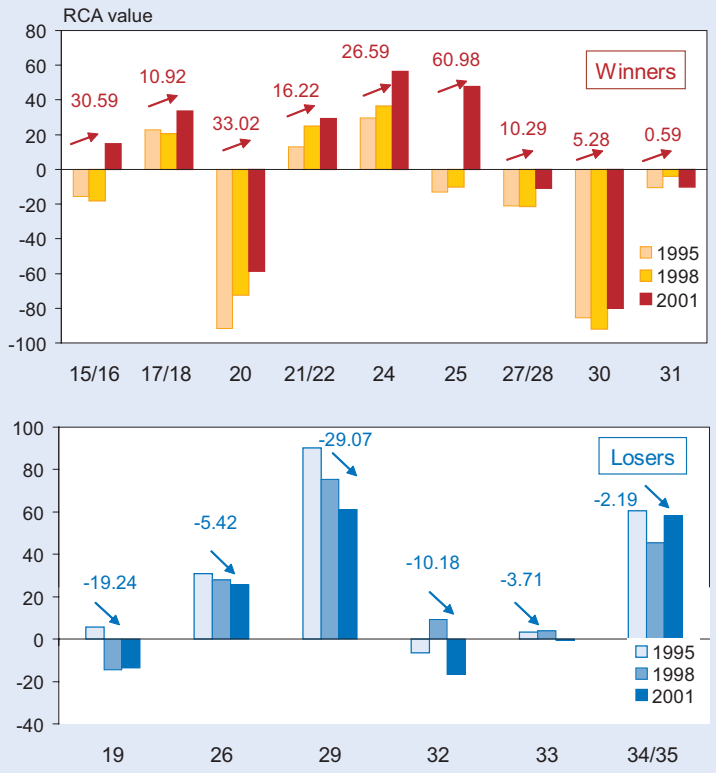
Upgrading and broadening

At the onset of China's reform era, its foreign trade was determined by the amount of goods

* Ifo Institute for Economic Research.
[1] Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic, Slovenia.
[2] Bulgaria, Romania, Turkey.

Figure 2

EU15'S REVEALED COMPARATIVE ADVANTAGE
(NACE 2-digit level)



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The Chinese export structure is today based on relative prices

available for export, i.e. exports basically constituted the residual of domestic production and domestic consumption (OECD, 1994). Lacking a price system that would be able to indicate the relative scarcity of a certain good, China's export activities were "blindfolded", resulting in deals that, from the perspective of its Western counterparts, made no economic sense. Although highly profitable for Western traders, they often ran counter to China's actual comparative advantage.[3] Since then China has converted its export structure into one that is determined by a price system based on relative scarcities and thus on the principle of comparative advantage.

[3] See Kamm (1989) for a detailed account of China's foreign trade in this period. As a matter of fact, most companies producing export goods had no contact with their foreign customers or the foreign markets as all international transactions were conducted by foreign trade corporations.

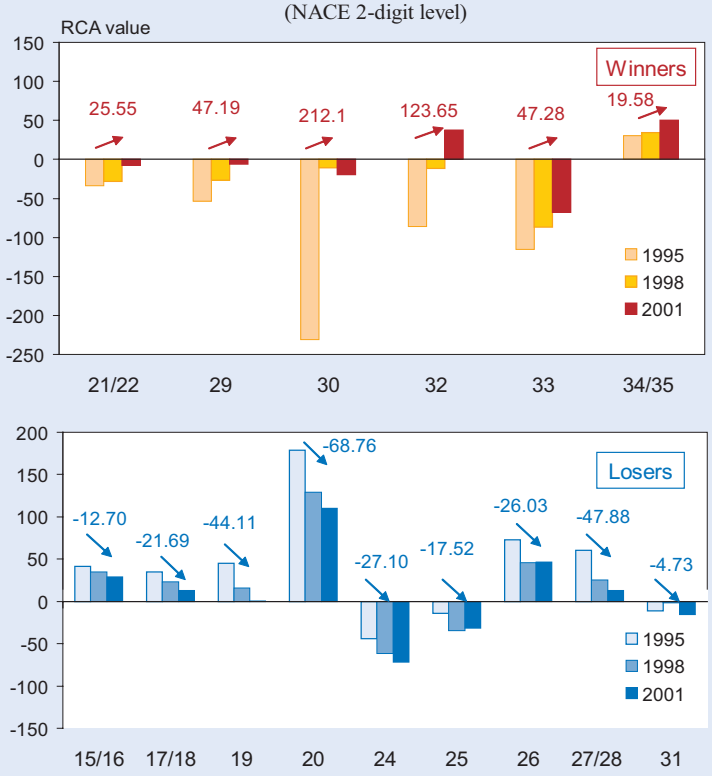
A closer look at the evolution of China's exports reveals that the reform process and rapid economic development have been accompanied by a sizeable shift in China's factor endowment. While resource-intensive, low-tech and labour-intensive products lay at the core of China's export activities during the 1980s, by 1995 China's export structure had already changed quite dramatically.

Today, there are no longer comparative advantages in agricultural and labour-intensive products only, but we find positive RCA values in some medium-tech and more capital-intensive products as well. And even more importantly, there is a tendency for further improvement in industries which supply more complex products, such as those of information and communication technology (ICT). Even in machinery and equipment, in which China has been dependent to a large extent on foreign technology, the former, strongly negative RCA value is showing a tendency towards a less disadvantaged position in international competition. In transport equipment the improvement of the RCA is driven by efficiency-seeking subcontractors to the major brands of the automotive industry. The big international players such as Delphi, Visteon, Bosch and Continental invest in China not only to meet the domestic demand, but to deliver parts and components to their clients in the United States and Europe (Fig. 1, upper chart).

In contrast, the product groups characterized by the greatest decline in RCA values are first and foremost concentrated in agricultural products (Fig. 1, lower chart). Furthermore, the advantage of China in exports of raw materials and intermediate products is declining. The worsening of the RCA values for pulp and paper as well as coke and refinery products seem to be primarily determined by an increasing demand of the booming Chinese economy, which has exceeded by far the expansion of domestic produc-

Figure 3

NEW EU MEMBER STATES AND CANDIDATE COUNTRIES' REVEALED COMPARATIVE ADVANTAGE
(NACE 2-digit level)



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Source: OECD; EUROSTAT; Wifo, own calculations.

tion capacities. But this development has not only been determined by growing final demand but also by the construction of new downstream capacities which permit the country to further process intermediate products and gain a higher share of the overall value added of a final product.

A comparison of the Chinese dynamic development of comparative advantages with the EU15 reveals a certain degree of complementarity. In those areas in which China shows a reduced competitiveness in trade the EU15 gains advantages. One of the few exceptions is in textile and clothing products. The improved situation for European producers in this market has been caused by the strength of high performance products and international well-known brands which benefit from a growing demand of upper income-class households (Fig. 2, upper chart). On the contrary, there are some losses in areas in which Europe possesses an outstanding position in international markets, such as in the manufacture of transport equipment and machinery. To a certain extent the losses have been induced by increasing international division of labour, with growing imports of low value-added intermediate products and low-end goods (Fig. 2, upper chart).

But not only imports from overseas have caused this development. Another driving force for this slight deterioration of EU15 export performance has been the integration of the new EU Member Countries into EU15 manufacturing networks. Since the mid-1990s these countries have improved their comparative advantage in most areas of the metal industries, in particular in machinery and transport equipment. Among losing industries have been the textile, clothing and leather products industries, branches in which these countries had been strong in the past but which do not possess high enough comparative advantages to be competitive against Asian low-wage countries (Fig. 3).

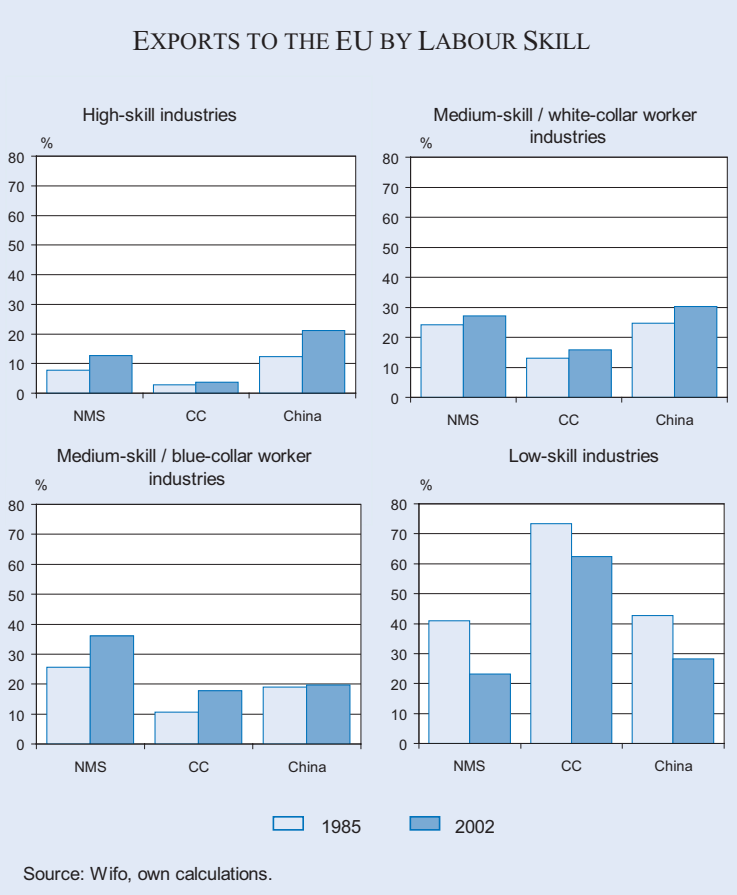
EU: Not only new competition from China but from the new accession countries

Mature industrialized countries face a challenge from emerging economies which exploit cost advantages, above all in labour. That is why technological progress and investment in human capital are perceived to be important strategies for succeeding in a globalized world.

Figure 4 depicts exports to the EU by quality of labour inputs for 1995 and 2002, respectively.[4] Across all three sub-regions (the New Member States, the Candidate Countries and China) we find

[4] For clustering industries by different characteristics of labour quality and by endowments of factor inputs the WIFO categorization has been applied, see European Competitiveness Report 2003, Appendix 4.A.4.

Figure 4



Source: Wifo, own calculations.

China: High-skill exports double their share in exports to the EU

a noteworthy upgrading in the quality of labour input. With respect to China, the share of products which require high-skill labour has grown by 75 percent between 1995 and 2002 to eventually surpass the threshold of 20 percent. Simultaneously, the share of products from low-skill industries fell by fifteen percentage points to less than 30 percent. These developments point at growing competitive pressure for human-capital intensive industries which used to be less exposed to competition from low-wage countries. One such example of growing import penetration in the EU15 by China is information and communication technology. Most ICT products are standardized mass products and traded in global markets.

The new Member States' and Candidate Countries' exports to the EU15 show some significant differences in comparison with China. Although the share of high-skill industries in total exports grew during the period under consideration, it remained much lower than the Chinese shipments to the EU. In 2002, the more advanced new Member Countries reached the 12 percent level which is about half that of China. Industries characterized by a vast employment of medium-skilled blue-collar workers, however, gained importance and reached a share of more than one third in total new Member Countries' exports to the EU. The more than proportional growth is mainly a result of international FDI engagement in the new Member Countries' automotive industries and the foreign-invested firms' subsequently increased export performance. With respect to high-skill blue-collar work, Chinese exports grew only proportional to overall exports to the EU.

The share of low-skill industries shrank in all exports. It is noteworthy that the Chinese share of low-skill exports is not that much bigger than the New Member Countries' respective shares. The bulk of exports of the three Candidate Countries is in low-skill labour with a share of more than 60 percent. Exports of textiles and apparel are of outstanding importance in this skill category. Most of these shipments originate in Turkey.

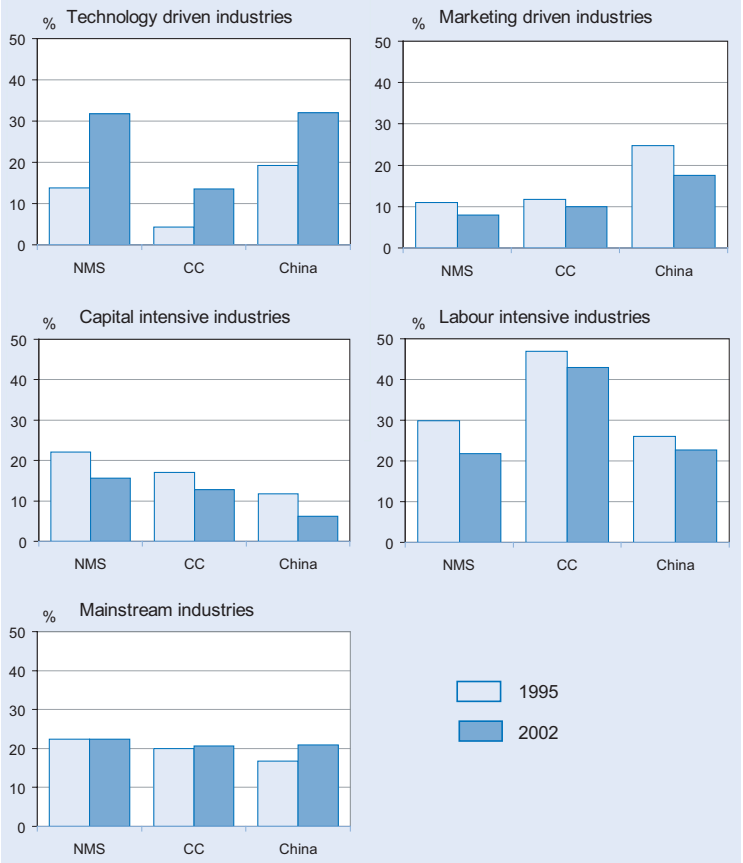
Skill upgrade reflected in Chinese exports

Another dimension for the clustering of traded goods addresses main factor endowments. We distinguish, (i) technology-driven products with high efforts in R&D, (ii) capital and (iii) labour intensive manufactured products and (iv) marketing-driven products, mostly consumer goods. With respect to the latter, access to distribution channels and access to final consumers are important features of corporate strategies. A fifth residual group comprises a variety of industries which are not characterized by a specific factor endowment. They are included under the heading of mainstream industries.

Figure 5 shows a remarkable growth of exports by technology-driven sectors. This category comprises computers and telecommunication equipment, as well as life-science products, measurement equipment and transport equipment. It is mainly due to

Figure 5

EXPORTS TO THE EU BY INPUT ENDOWMENT INDICATORS



Source: Wifo, own calculations.

products, construction materials and basic metals. These products suffer from the poor growth of European demand and to a certain extent from the relocation of production to overseas locations, especially of textile fibres. Exports of these goods have generally lost some of their importance. Many of the products of capital-intensive industries are commodities like steel and bulk chemicals. Transport costs are of importance and capacities are built close to major clients. This means that international trade is to a large extent driven by regional imbalances which in the long run will be offset by investment in new capacities.

With respect to labour-intensive industries, China and the new Member States have similar shares of around one fourth of total exports to the EU. A slight decline is observable between 1995 and 2002. The most important product group in this category is apparel; other items include handicraft products and labour-intensive assembled machinery and transport equipment.

Technology-driven exports to the EU are increasing their shares

the latter that the new Member Countries' technology-driven exports to the EU show very dynamic growth. Furthermore, exports of computers and telecommunication equipment by new Member States and Candidate Countries also exhibit strong growth, but the shares are still small as compared to the respective Chinese performance.

Marketing-driven exports have generally lost some of their importance over the period under consideration. This proves true for all three export regions and can be explained by flat consumer demand since the late 1990s. A comparably strong position of Chinese marketing-driven exports is due to articles like games, toys, sporting goods and the like.

Capital-intensive industries are predominantly process industries that primarily manufacture intermediary goods. This category comprises pulp and paper products, man-made fibres, most chemical

The residual category contains most of the engineering industries and serial products of different materials. Among them are textiles, such as knitted and crocheted articles, the production of which relies on somewhat higher skill requirements and specific technologies. The mainstream industries make up nearly half of the Candidate Countries' exports to the EU. In contrast, the respective shares of the new Member Countries and of China shrank to some 20 percent in 2002.

In summary, China is not only a supplier of industrial goods manufactured with cheap and low- skilled labour. Instead, much of its exports consist of so-called technology-driven high-tech products. Hence, China's highly competitive position in the global market not only arises from its abundant availability of cheap labour, but has also been fostered by a dynamic upgrading of its industrial structures.

Exports belonging to the technology-driven and high-skill category are likely to adversely affect a broad range of highly developed European industries. The Chinese challenge has become much more complex than could be expected just a few years ago.

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